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ABSTRACT

The papers presented at this conference review current research on effective educational practices for low-achieving students and identify those that might be applied to programs funded under Chapter 1 of the Education Consolidation and Improvement Act of 1981. A function assumed by several conference participants was to act as reactor to papers written for a parcicular session. This report reviews five papers presented at the session on curricular and instructional issues in compensatory education. For the most part the papers focus on research in the general classroom setting, not compensatory education research, and research on children in general, not those who are considered disadvantaged. Implications are drawn from that research for planners of compensatory education programs and services. The papers agree that the problem is not with the disadvantaged child, and that improved teaching and raised teacher expectations as well as improvement of schools as educational organizations will raise achievement levels. The possible effects of linguistic, language, cultural, health or other differences are considered to have little or no impact. Under this assumption, the implications for Chapter 1 students are that those programs and practices which work with other students should work with Chapter 1 students. However, teachers and planners must understand which human differences make a difference and attend to them in their planning. A list of references is appended. (PS)

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CURRICULUM AND INSTRUCTION: REACTIONS

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CURRICULUM AND INSTRUCTION: REACTIONS

The Executive Summary of the National Institute of Education Compensatory Education Study (1978) viewed compensatory education as:

> one of the nation's most important efforts to equalize educational opportunity. The concept stems from the recognition that children from disadvantaged backgrounds frequently do not enjoy the same educational benefits as their peers. Many attend school districts that have low overall revenues or high concentrations of disadvantaged families. . . . Compensatory education is intended to ease those problems by providing disadvantaged children with additional services to help them complete their education on more equal terms. (p. 1)

Carter (1984) has observed that: "There is no simple explanation or description of compensatory education (CE); it is an amalgam of many different programs, practices, and services" (p. 5). Chapter 1, as did Title I earlier, encompasses thousands of different programs, intervention strategies, and other activities. The more than 30,000 Title I projects across the nation, for example, reflect various goals and diverse treatments which were not readily converted into overarching goals or successful program models.

Compensatory education can be characterized or catalogued in a variety of ways, such as:

1. By target population (e.g., preschool, elementary, secondary, tertiary, adult, etc.)

2. By nature of treatment (e.g., remedial, developmental, enrichment, therapeutic, etc.)

3. By locus of activities (e.g., school, family, community, workplace, non-school agency, etc.)

4. By nature of services (e.g., instructional counseling, health, community development, etc.)

5. By intent of intervention (e.g., system reform, reversing underachievement patterns, integration/desegregation, closing the achievement gap, redistributing power, etc.)

6. By focus of diagnostic/prescriptive activities (e.g., learners, teachers, other professionals, the school system, the community, etc.)

7. By source of funding or legislation (e.g., Federal, state, local, foundation, corporate, etc.)

These catalog sets are not mutually exclusive, of course, and most programs and projects fit into more than one set. Some compensatory education efforts have limited goals while others have goals which are more global and comprehensive. Most efforts are additive in the sense that they are tagged on to existing programs rather than designed to effect fundamental changes.

The analysis of the various instructional and supporting services provided the almost 5 million pupils in Chapter 1 programs in 1983-84 showed the following distributions: (a) instructional-- reading (75 percent), mathematics (46 percent), language arts (22 percent), limited English (12 percent), other instructional areas (9 percent), and vocational (1 percent); (b) supporting--health and nutrition (15 percent), attendance and guidance (17 percent), other supporting (7 percent), and transportation (5 percent). As has been the case since passage of Title I ESEA of 1965, the majority of students are still involved in some type of reading and mathematics compensatory education programs. While an evaluation component is required for all proposals, as Mullins and Summers (1983) have pointed out: "The evaluation literature is so vast and its results so varied that virtually any hypothesis can be supported by a number of studies" (p. 339).

Implicit or explicit in all compensatory education programs are hypotheses or theoretical bases for the interventions or treatments designed. For instance, Levin (1985) has pointed out:

> All student populations include substantial individual variations in educational performance. However, by virtue of the accident of birth, some groups of students are likely to experience only the most limited educational progress in the present school system. Persons from non- White, Hispanic and immigrant families, and from households where parents have low income and little education, tend to complete fewer years of schooling, are more likely to drop out of high school and show lower test scores in virtually all subjects than their more advantaged peers. (p. 3)

Implicit in Levin's statement is the concept that there are deficiencies in the educational environment provided by the low-income and racial or ethnic minority families which affects their cognitive and linguistic development for which schools must compensate and for which schools must alter their usual programs and instructional strategies. For two decades, there

has been controversy about the etiology of educational disadvantage. The poor scholastic performance of the population for which compensatory education is intended has been so amply documented that few challenge the accuracy of such reports. The past two decades have witnessed a considerable number of research and studies as well as the initiation of a vast array of programs and projects.

Gordon (1970) noted that most of the research can be divided into two broad classifications--one encompassing studies of the performance characteristics of disadvantaged groups and the other containing descriptions and superficial assessments of programs presumably designed to reverse the poor academic achievement patterns of the disadvantaged. Much of the research, Gordon asserts, tends to focus on "deficits" or "differences" of disadvantaged from more advantaged populations with such deviations "used to account for the observed dysfunctions in education performance among members" of the former group (pp. 1-2).

As I wrote some time ago (Passow, 1971) but believe is still applicable:

> There is a rich and growing body of literature on cognitive and affective development differences among various racial, ethnic, and socioeconomic groups; on family structure, life styles, and child-rearing patterns as these affect educational processes; on language development and linguistic differences; and on other behavioral characteristics of individuals and groups. While many studies focus on social and cultural factors affecting educational achievement, there is increasing attention to the health of the disadvantaged child as a contributing factor to scholastic failure....Social class and the socialization processes have been widely studied with respect to behavioral correlates, especially of young children....A variety of studies have focused on the effects of segregation and the consequences of desegregation on minority group performance.... Research has also shed some light on the effects of organizational and grouping practices, teacher expectations, curricular options, instructional materials, and neighborhood setting, and similar factors on achievement of disadvantaged studies. (pp. 9-10)

Some of this research and experimentation has stimulated treatment programs and intervention strategies since most program proposals contain an implicit, if not explicit, basis for the intervention or treatment.

> For example, if experiential differentials and deprivations in infancy are perceived as accounting for minority group youngsters entering classrooms ill-prepared to cope with the demands of the school, then early childhood programs should be designed to compensate for such deficiencies. If language development impedes transition from concrete to abstract modes of thought, then programs should provide appropriate linguistic experiences that will nurture such growth. If child-rearing patterns and maternal teaching styles affect cognitive growth, then parent education should develop different skills and behaviors. But even research that does provide the kinds of analyses that contribute to building theory and understanding behavior often reports equivocal findings that open debate rather than provide guidelines for the practitioner. Consequently, there are several "theories" or explanations or models set forth to explain inferior scholastic attainment and intellectual functioning of poor children—none of which is completely satisfying. Nor is it likely that a theory will emerge although theoretical models will provide better guidance for program-planners and decision-makers. However, the cafeteria-eclectic approach that presently prevails leaves much to be desired. (Passow, 1971, p. 10)

Despite these observations which were made 15 years ago and research efforts which have continued in the intervening years, one still finds prevalent at assumption that the disadvantaged are really no different from other students except that they do not perform as well academically as do their more advantaged peers. For example, the index to the Handbook of Reading Research (Pearson, 1984) has no entry regarding "Disadvantaged," but does include one on "Minority populations, 99-102, 163." The first three pages simply criticize the experimental and correlational research on reading for minority children as being equivocal and uninformative and suggest an interactive ethnographic approach instead. The equivocal and uninformative experimental and correlational research on reading for minority children is never discussed nor reviewed. The second, single-page reference discusses the difficulties in constructing tests that were uninfluenced by differences in relevant prior knowledge such as racial speech patterns: "Minority groups tend to be disadvantaged economically and are less likely to secure exposure to a literate environment. Hence, diagnostically important differences in performance are likely to persist" (Johnston, 1984, p. 163).

The Handbook of Research in Early Childhood Education (Spodek, 1982) has nothing in its index which indicates any differences between advantaged and disadvantaged youngsters except a listing for "Head Start" with references scattered on 12 pages plus eight pages devoted to the goals of and evaluations of Head Start programs. Under an index listing for "Language acquisition and development," one finds scattered references which actually do deal with the disadvantaged such as bilingual development, linguistic variability, modeling and environmental feedback, second language, speech code, and syntax, all of which deal with aspects of the development of the disadvantaged. There is also an entry on ethnic-racial considerations in motor development in early childhood. The indexes of such encyclopedias as the Fifth Edition of the Encyclopedia of Educational Research (Metzel, 1982) and The International Encyclopedia of Education: Research and Studies (Husen & Postlethwaite) do not produce more than a few isolated one- or two-page citations except for the latter which does have an 8,000-word article on "Compensatory Education" which deals with the general concepts and programs but not specifically with curriculum and instruction.

Despite the absence or paucity of references in these handbooks and encyclopedias sampled, there does exist research regarding the linguistic, cognitive, affective, social, developmental, learning styles, and other characteristics of low-income, racial and ethnic minorities which support the belief that disadvantaged children and youth do exist, that they have unique and different needs which require programs and services which we label "compensatory education," and that they pose challenges to teachers and curriculum planners whose "normal" strategies and programs seem not to work. What prompts this overlong prologue to the critiques is the fact that, for the most part, these papers have not reviewed that literature but have chosen to review the general research related to the topic. As Brophy notes at the outset: "Most of this research was conducted in regular classroom settings rather than in special classes set up to deliver compensatory education" (p. IV-122). Similarly, Romberg points out that he has "not reviewed the detailed characteristics of compensatory programs for school mathematics during the past quarter century," although he believes such an analysis is needed but is beyond the scope of his paper (p. IV-5). For the most part, it is research in the general classroom setting, not compensatory education research, and research on children in general, not those who are considered disadvantaged (Chapter 1 students) which is reviewed in the papers and implications are drawn from that research for planners of compensatory education programs and services.

Brophy: "Research Linking Teacher Behavior to Achievement"

The Brophy paper reviews research on school and teacher effects on student achievement in regular classroom settings, arguing that there is little evidence supporting the need "for qualitatively different forms of instruction for students who differ in aptitude, achievement level, socioeconomic status, ethnicity, or learning style" and that "most findings concerning effective instruction of heterogeneous groups of students in regular classrooms will also apply to instruction of the same content to homogeneous groups of Chapter 1 students, whether in regular classrooms or in special groups" (p. IV-122). One might conclude at the outset that there is no need for compensatory education for Chapter 1 students, although the paper does not draw such a conclusion as one reads on.

Brophy concentrates the review on "the literature on instruction (how to teach) but not on the literature on curriculum (what to teach)" and on research dealing with "general principles of classroom teaching rather than principles unique to instruction in particular subject matter areas" (p. IV-123). This dichotomy between the how and the what is often made although there are those who argue that the interactions between the two are important and the separation limits studies of effects.

In the section on school effects, Brophy makes a useful distinction between school effects and school effectiveness because "a school's effectiveness in eliciting student achievement gain cannot be equated with the school's quality," a broader concept encompassing both achievement and affective outcomes "such as promoting students' individual confidence and motivation as learners and their collective development of prosocial attitudes and cooperative behavior" (p. IV-124). Critics of the effective schools literature fault the studies because the outcomes are too narrowly conceived (usually only gains in reading and mathematics are considered) and the affective outcomes are ignored. There are compensatory education programs whose prime focus is on developing learner self-esteem and other affective behaviors as the basis for promoting academic achievement. (See, for example, Faintini & Weinstein, 1968.)

The effective schools research has been done mainly in inner-city schools with concentrations of Chapter 1 students, schools identified as "effective" essentially because the academic achievement gains were higher than would be expected. They are schools, Brophy points out, which have established "orderly, learning-oriented" environments and are schools that "place a high priority on [academic achievement] and follow-up

by adapting high but realistic expectations, coordinated instructional efforts, and periodic assessment of progress" (p. IV-125). The implications of these findings are that the poor academic performance of Chapter 1 and other underachieving students is caused by the school and the school staff who need to change. Brophy notes that the "research on school effects is relatively silent about how teachers can accomplish this . . . but research on teacher effects" is more helpful (p. IV-125).

The review of research on "teacher effects" which relates teacher behavior to student outcomes reports both the quantitative and qualitative findings, most of the studies having been done in the past 15 years. Brophy observes that "the most basic and consistently replicated findings link students' achievement gains to their opportunity to learn the material, and in particular to the degree to which their teachers carry the content to them personally through active instruction and direct supervision of their learning efforts" (p. IV-126). Several early studies of inner-city classrooms found that disadvantaged students received far less instruction than their more advantaged peers because a good deal of teacher time was devoted to classroom behavior problems and to other management problems which reduced instruction time. Brophy suggests that if teachers are businesslike and task-oriented, they allocate most classroom time to activities with academic objectives rather than personal adjustment or group dynamics objectives. Some researchers such as Boocock (1972) believe that "what children who fail to 'make' it in school lack is role-playing skill, not the desire to succeed, and because they do not know how to play the role of student, they are less likely to do the things that will lead to success" (p. IV-126). Boocock suggests that:

> since low-SES [socioeconomic status] children are most likely to be subject to negative image and treatment, there is a need for strategies designed either to change teachers' perceptions of the kinds of students they now consider undesirable or to create new roles which can mediate between these children and the school system, perhaps helping them to change symbolic things about their appearance or behavior which will lead teachers to view and treat them differently. (p. 127)

In commenting on the quantitative findings, Brophy identifies four classes of teachers who are less likely to be successful in eliciting student achievement gains. One class consists of teachers who are "burned out." Since proportionately teachers in Chapter 1 schools are more likely to be burned out than teachers in schools with fewer Chapter 1 students, how to prevent or alleviate teacher burnout repre-

sents a significant staff development problem. Are the lack of academic achievement and disruptive behaviors contributing factors to teacher burnout or does teacher burnout contribute to low achievement and management problems?

A second class consists of teachers who place higher priority on affective or social outcomes than on achievement outcomes. Here, staff development would probably focus on orienting such teachers to emphasize social and affective outcomes as well as achievement outcomes, especially since both outcomes are of importance to Chapter 1 students for whom affective and social goals contribute to academic achievement as well.

The third class consists of teachers who lack classroom management skills and who could profit from training focused on enhancing those skills.

The fourth class consists of teachers who rely on individualized learning modules and other materials-based approaches to individualized instruction instead of carrying the content to students more directly through whole-class or small-group instruction. Brophy suggests that the problem is that responsibility for planning and managing is shifted from the teacher to the student and responsibility for carrying content is shifted to the materials. Individualized learning packages, he reports, seem to be more successful with special classrooms with small student-teacher ratios such as those often used with Chapter 1 students. He cites findings "that in special classes with small student-teacher ratios, teachers can move the students through curricula at a faster pace, can provide more tutorial and individualized instruction, and can assign more difficult work because they are able to continually monitor everyone's progress and provide immediate help when needed" (pp. IV-131). Thus, Brophy underscores the "role of active instruction from the teacher in producing student achievement gain," instruction which can be provided in tutorial form in special classes with small student-teacher ratios or in small groups within classrooms where appropriate management techniques have been designed. The implications for staff development seem clear.

In summarizing the qualitative findings concerning teachers' management of lessons, Brophy discusses research regarding three major instructional tasks--giving information, asking questions, and providing feedback. Here, one wishes that some of the studies which deal with these tasks in classrooms with Chapter 1 students or students from racial/ethnic minorities were included. For example, the report of the U.S. Commission on Civil Rights Mexican American Education Study (1971) found disparities in teacher-pupil interactions between Anglo and Mexican American pupils. An Anglo bias was

found with respect to teacher praise and encouragement, acceptance and use of student ideas, positive teacher response, teacher questioning, noncriticizing talk by teacher, and all student speaking (pp. 21-42). The report concluded "that the schools of the Southwest are failing to involve Mexican American children as active participants in the classroom to the same extent as Anglo children. On most measures of verbal interaction between teacher and student, there are gross disparities in favor of Anglos" (p. 43). The report notes that Chicano children differ from Anglo children in language, culture, and economic background; that many enter school speaking little English or have serious problems using English; that the culture, values and family experiences differ; and "these discrepancies between the school and the home are one of the main causes of the lower participation and achievement levels of Chicano pupils in school" (p. 43).

Brophy's review of the qualitative findings regarding teacher behaviors in enhancing student achievement is thorough and informative. One suspects from research such as that reported by the Mexican American Education Study that studies in Chapter 1 classrooms and schools would provide some different dimensions to the qualitative findings Brophy reports. He does note that "much more information is needed about what kinds of classroom tasks and assignments are appropriate for accomplishing particular objectives with particular students" (p. IV-140), especially with the population which comprises Chapter 1 students, one might add.

The review on cooperative learning methods as an alternative to traditional independent seatwork is a means for managing student assignments. The Mexican American Education Study pointed to cultural differences between Chicano and Anglo children which included much more cooperative effort among the latter. Chicano children were able to manage cooperative tasks much more effectively than their Anglo peers. The work of Slavin, the Johnsons, and their colleagues seem to provide considerable promise with respect to cooperative learning methods. Cooperative learning appears to be effective both with respect to affective as well as academic goals, although there are apparently certain limitations regarding its appropriateness which Brophy notes (p. IV-142).

The section on interactions with context and learner characteristics, especially the discussion of student socioeconomic status/ability/affect, is particularly relevant to Chapter 1 students. Brophy asserts that low-SES or low-achieving students "need more control and structuring from their teachers; more active instruction and feedback, more redundancy, and smaller steps with higher success rates....more review, drill, and practice, and thus more lower-level questions....exposure to less material, but with emphasis on

mastery of the material that is taught and on moving the students through the curriculum as briskly as they are able to progress" (p. IV-145 - IV-146). He suggests that low-SES students "are more likely to require warmth and support in addition to good instruction from their teachers, and to need more encouragement for their efforts and more praise for their success" (p. IV-146). While one would concur completely with Brophy's suggestions, it is interesting that there are no research references in this section, unlike most of the paper.

Brophy finds most research on compensatory education in other than regular classroom settings uninformative because of the absence of extensive classroom observation. One wonders why this is so. He does cite five studies in special educational settings and concludes that "the same aspects of the whole-class instruction/recitation/seatwork approach that are associated with achievement gain for students in general are also associated with achievement gain for" Chapter 1 students with two qualifications: Chapter 1 students "need even more active instruction and close supervision....more focused, structured, and redundant teaching and more personalized and supportive interactions...." And, in special small class settings with teacher aides, they can be paced more rapidly and "taught using individualized materials and instructional methods that are not feasible under more typical classroom conditions" (p. IV-148). These are two very important qualifications.

The review of what Brophy labels "other relevant research" adds some significant insights. The section on teaching cognitive strategies is particularly useful. Brophy suggests that "Chapter 1 students are among those most likely to need heavy doses of strategy training in addition to more traditional instruction in academic content and skills", although we do not yet know "how much can be accomplished through strategy training with low achievers" (p. IV-50). We can, however, begin to test the value of strategy training with Chapter 1 students and we can explore cognitive modeling with such students.

Brophy's discussion of mastery learning--an approach which at least theoretically should be especially useful with Chapter 1 students--is balanced and helpful. He concludes that "available research does not support the notion of wholesale replacement of traditional instruction with mastery learning approaches in typical classrooms"--something which has been advocated by some supporters of mastery learning--and that "there do appear to be potential benefits in attempting to implement at least some aspects of the mastery learning philosophy" (p. IV-154).

As with mastery learning, individualized/adaptive instruction and computerized instruction should, at least theoretically, be useful for Chapter 1 students. Brophy's discussion of two individualized instructional programs (ALEM and TAI) indicate potential but also problems with each and with the procedure generally. Slavin's (1985) caution in implementing TAI in inner-city classrooms is helpful in suggesting problems with individualized programs of this type generally with low-achieving students for whom they are meant.

While suggesting that computerized instruction should theoretically avoid problems associated with individualized learning systems, Brophy then indicates some advantages and some problems of computers. Among the problems he cites are differential access to computers between Chapter 1 and other schools, unavailability of appropriate software, and the cost of related technology. In the near future, Brophy thinks "teacher's options for integrating computerized instruction into their classrooms would be limited to drill and practice programs and educational games....computerized instruction is not yet a solution to the practical problems involved in individualized instruction in the typical classroom" (p. IV-161).

The conclusions Brophy draws seem well supported by his review, including the two common themes which cut across his findings: (1) "that academic learning is influenced by the amount of time that students spend engaged in appropriate academic activities" and (2) "that the students learn more efficiently when their teachers instruct them actively by structuring new information and helping them relate it to what they already know...." (p. IV-164). Brophy relates these themes to the task of maximizing achievement gains of Chapter 1 students with a number of suggestions which are clear and direct. Because the research cited does not deal with differences in language, culture, early experiential background, and a variety of other factors associated with Chapter 1 students, Brophy's implications make good sense but would have a firmer base were such research included. Are there additional implications for teaching low-SES, racial/ethnic minority group children in the context of classrooms and schools which are de facto segregated?

Wilkinson: Grouping Students for Instruction

Grouping students for instruction has been a controversial practice in American schools since at least the turn of the century. Despite the continuing controversy, grouping and tracking are widely practiced. Most recently, several of the so-called national reform reports have criticized grouping

practices (Adler, 1982; Boyer, 1983; and Goodlad, 1983, for example). Oakes (1985) and Peterson, Wilkinson and Hallinan (1984) are two examples of recent publications which discuss research and philosophy of grouping and either raise new issues or explore old ones.

The four distinct traditional approaches to the study of grouping--sociological, sociolinguistic, process-product, and cooperative learning--which Wilkinson discusses at the outset do not have the same history. Certainly through the 1950s, what Wilkinson calls the process-product approach prevailed and dominated grouping research as most studies attempted to determine student outcomes from differing grouping patterns. Generally the focus was on homogeneous versus heterogeneous groups, the homogeneity usually being determined by IQ or achievement test scores. There were a few sociological studies during that period, beginning in the 1920s. However, the sociolinguistic and cooperative learning approaches are much more recent. The various grouping studies, having different purposes and foci and using quite diverse research approaches, add to the problems and complexities of integrating the findings. Wilkinson presents a model for integrating research on classroom groups which suggests four important sets of variables and hypothesizes their relationships.

Focusing on within-class grouping, Wilkinson presents two key issues: "(1) the bases on which students are assigned to groups, including the formation and stability of groups; and (2) the patterns of consequences for students of interactional processes in instructional groups" (pp. IV-186). More of the research literature deals with between-class grouping than with within-class grouping. However, the research literature dealing with both of the issues Wilkinson discusses is quite extensive and often quite equivocal.

Although the most common basis for within-class grouping is student ability with evidence that teachers try "to create and maintain instructional groups that are homogeneous with respect to student's ability" (p. IV-186) Other factors also affect the assignment of students to ability groups--"distribution of student aptitudes or achievement in school or classroom, organizational constraints within the school or classroom, and student management and discipline as well as the number, size and diversity of students within groups...." (p. IV-187). It is not clear from the report of the study by Sorenson and Hallinan (1984) what is meant by the statement that "the data showed that while racial composition of classrooms did effect the formation of ability groups, race in itself was not a criterion for assigning students to ability groups" (p. IV-186) It is significant that "teachers apparently used results from the tests differently for Black and White students in forming groups" (p. IV-187) When the claims of test bias are added to differential use of test

results, the validity of the groups formed is called into question.

Although Wilkinson is focusing on within-class grouping, the between-class and between-school grouping affects the pools from which the within-class groups are drawn. That is, there is a good deal of evidence that low-income and minority children tend to be concentrated in lower-ability classes within which groups are then formed. The wide use of pullout programs for Chapter 1 instructional activities also affects the kinds of within-class groupings.

Wilkinson observes that "while instruction appears to be closely linked to patterns of within-class grouping, learning may not be so clearly associated" (p. IV-187). Research suggests that there is considerable irregularity in the differentiation of curriculum and instruction within-class groups as well as between classes. That is, frequently the curriculum, strategies, and materials are the same for each group with the exception of the pacing of instruction. In other instances, there are real differences in curriculum, strategies, and materials. As for the question whether "learning may not be so clearly associated" with patterns of within-class grouping, the studies Wilkinson cites seem to deal with the stability of groups once formed, not with learning within those groups.

Wilkinson suggests that the developmental level of students should be considered in the formation of groups, that there should be flexibility and reassignment when appropriate, and that students should not be labeled as members of low-ability groups lest their self-esteem is lowered and continued low-achievement results. The research on the effects of grouping on self-esteem, motivation and other affective behaviors is not as clear as some of the literature implies. For example, Goldberg, Passow, and Justman (1966) found that:

> In general, self-attitudes seemed to be rather more sensitive to grouping than were other nonacademic variables, but the effects of narrowing the range or separating the extreme levels were to <u>raise</u> the self-assessments of the slow pupils, <u>lower</u> the initially high self-rating of the gifted, and leave the intermediate levels largely unaffected. The slow pupils also showed greater gains in their "ideal image" when the gifted were absent than was true when they were present. (p. 163)

Wilkinson concludes that at the elementary school level, "students in low-ability reading groups fare poorly" and that this poor achievement "is thus the result of low expectations by the teachers and/or the poor quality of teaching that they

receive" (pp. IV-189). However, this conclusion is tempered by another interpretation of the data: "That the low-ability students are, in fact, receiving appropriate instruction, given their level of performance and achievement" (p. IV-190). It is the latter interpretation which is the basis for much Chapter 1 instructional grouping--that low-achieving students can be provided with instruction and materials based on their diagnosed needs.

The research cited on all-student heterogeneous (mixed ability level) groups suggests that low-ability students apparently benefit in achievement if the groups are small enough so that they can be provided with what is required to support their learning. However, "unless teachers intervene to change the nature of the interactional processes in the direction that is beneficial for all students," all-student heterogeneous groups may contribute to maintaining the status quo.

Wilkinson's review of cooperative learning suggests that such techniques "do show positive effects on academic achievement, but these effects are fully dependent on the particular settings, measures, designs, and populations" (p. IV-192). Cooperative learning may provide a better environment for teaching basic skills as well as having a positive effect on racial relations. Whether a students' low ability is a function of lack of basic skills or of deficits in higher-order cognitive processing should determine which cooperative learning techniques will be most appropriate. Moreover, the developmental level of the student will determine the most appropriate cooperative learning situation.

The conclusion Wilkinson draws from her review is that "the research literature on within-class instructional grouping is not as complete as we would like to guide policy and practice" (p. IV-193). Goldberg et al. (1966) drew a similar conclusion:

> Many of the issues concerning grouping remain unresolved, and most questions are still unanswered despite seventy or eighty years of practice and at least forty years of study. Insufficient and conflicting data are being used to support partisan views concerning the consequences of grouping rather than to resolve the persistent issues. (p. 21)

Wilkinson agrees with Carter (1984) that "grouping students for instruction within Chapter 1 classes may be a useful educational practice to stimulate the learning of low-achieving, disadvantaged students" (p. IV-194). The implications for Chapter 1 Wilkinson suggests make sense:

-- Consider many factors in assigning students to groups, especially individual students' needs and characteristics.

-- Reassign students to groups and alter groups as seems appropriate.

-- Use a variety of grouping practices (including teacher-led and all-student groups) to help students' learning

-- Teach students how to interact effectively in small groups so students learn both cognitive and social skills.

-- The quality of instruction the teacher provides and the assistance other students provide should be appropriate to the students' level and skills.

These implications make sense considering the research and experience available and the deeply ingrained phenomenon of within-class and between-class groupings. Wilkinson agrees with Dreeban (1984) "that grouping within classes may be used to increase students' achievement, and address individual differences, provide differential instructional methods" (p. IV-195). This is the basic argument which has sustained grouping as a widespread practice in American schools. She suggests further research is needed. Research which focuses on the particular needs and characteristics of Chapter 1 students and the consequences of varied grouping practices on these students with their diverse needs would be especially useful. In the meantime, it might be well to keep in mind that the purpose of grouping is to facilitate learning and teaching and that flexible, varied grouping techniques are needed.

Although Goldberg et al. (1966) studied between-class groupings, two conclusions warrant repeating here:

> ....simply narrowing the ability range in the classroom does not necessarily result in greater differentiation of content or method and is not associated with greater academic achievement for any ability level.
>
> ....narrowing the range of ability (on the basis of group intelligence tests) per se, without specifically designed variations in program for the several ability levels, does not result in consistently greater academic achievement for any group of pupils. (p. 161)

Having stated those conclusions, one must point out the current argument of Goodlad (1983) and others that such differentiation denies equal access to knowledge and, as a consequence, contributes to inequity.

Romberg: Mathematics for Compensatory School Programs

In his introduction, Romberg indicates that what is addressed "is the reality of mathematical compensatory programs and how they meet or fail to meet" the intentions of the social legislation which has been enacted to help underprivileged children (p. IV-5). His approach is to make three comments about the studies he reviewed and raised six issues which he believes must be dealt with by those interested in compensatory education in mathematics. His comments were intended to focus attention on "some interesting and even disturbing aspects" he found from his review.

Romberg observes that: (1) "there is no analysis of the mathematical deficiencies of low-income children or what constitutes the important ideas from mathematics they (or all children) should know (p. IV-6);" (2) "the approach to compensatory education in these studies contained no statements of goals or even a description of a desirable end product (p. IV-6);" and (3) the programs could be organized into three broad categories: enrichment, differential, and developmentally based. The enrichment programs were based on an assumption that "low-income children lacked a variety of experiences and needed those experiences and intellectual challenge in order to make them similar to the middle-class students" (p. IV-5). Differential programs were based on the assumption that if children differ, then classroom organization and procedures must be differentiated. Independent-paced instruction which takes into account rate of learning and highly structured instruction which uses direct drill methods were evolved. Developmentally based programs were grounded on developmental psychological theories such as the child's level of logical concept thought.

Romberg observes that "if one views mathematics as things human beings do such as abstracting, inventing, proving or applying....there is nothing in the programs....reviewed that would give low-income students an opportunity to do any important mathematics" (p. IV-11). Clearly, Romberg believes the same is true about mathematics programs for all children, not just low-income children. The goal of most compensatory education programs is to help such students attain acceptable scores on standardized mathematics tests, not "to do any important mathematics."

Six issues are posed by Romberg which he believes should be addressed as a basis for developing a program which is mathematically sound and "would provide all students an opportunity to learn mathematics" (p. IV-11). These are (1) the fragmentation of mathematics so that the interconnectedness

of mathematics ideas is lost; (2) the conception of learning as passive absorption of information and the failure to apply knowledge from cognitive science to mathematics instruction; (3) the deskilling of teachers who have become only managers of resources; (4) the creation of differential opportunities for learning for low-income students resulting in a widening of the differences between them and more affluent students; (5) the defining of the curriculum by workbooks and judged by tests which are inadequate and inappropriate; and (6) curriculum change which is rarely assimilated into the school as the developers intended.

Romberg believes that all education, especially mathematics education, is too narrowly mechanistic, with mathematics instruction consisting of the "acquisition of a prescribed amount of knowledge under competitive conditions and time pressures" (p. IV-16). He provides what he calls a basis for developing a contemporary mathematics program which represents a new perspective for compensatory mathematics programs. In sum, Romberg argues that mathematics instruction needs to be changed and that a good place to initiate that change is to develop a contemporary mathematics program for low-income students.

At the root of several mathematical education dilemmas, Romberg notes, is the "distinction between knowledge and the record of knowledge, knowing and knowing about" (p. IV-16). The emphasis in mathematics instruction, he argues, must be "on experiences which help [students] know mathematics--when mathematical knowledge means knowing and doing mathematics rather than knowing about mathematics, other things follow" (p. IV-17). This calls for redefining the work of the students and the work of the teachers. The work of students becomes that of constantly extending "the structure of the mathematics that they know by making, testing and validating conjectures, which may originate as postulates of conscious thought or be derived intuitively" (p. IV-18). The work of the teacher becomes that of providing the environment, acting as a mentor, and getting out of the way .

Even if a common mathematics curriculum were developed, interest groups would argue that knowledge about differences among individuals should be considered in making instructional decisions, differences which are based on differential psychology, developmental psychology and sociology. There are differences in perspectives about individual differences and differences in conclusions about how instruction should be differentiated. There are those who argue that "instruction should be adapted to 'complement' differences;" or "that instruction on the same mathematical units should be adapted to 'compensate' for differences;" or "that different students should have the option of being taught different mathematics."

Romberg acknowledges that each of these perspectives are currently found in schools but does not indicate which, if any of the arguments, he accepts as being appropriate to the new contemporary mathematics curriculum he would develop. He simply suggests that considerable open discussion and serious debate should be carried out.

Romberg's paper takes the position that mathematics education as it exists in schools today is inadequate and that compensatory education in mathematics reflects the inadequacies of mathematics instruction generally. He would begin by developing a new contemporary mathematics program that would reflect, in some ways, the contemporary mathematics programs which developed in the 1960s. He would then deal with what he calls the serious, social-political question, regarding the consideration of individual differences with respect to the teaching of the common course of study of mathematics. This represents a major challenge in curriculum and instructional materials development as well as teacher education. It is a task which Romberg implies is needed if we are to come to grips with compensatory education in mathematics as a subset of the larger problems of reforming mathematics education for all children.

Calfee: Curriculum and Instruction — Reading

Calfee bases his draft report on two chapters--"Research on Teaching Reading" and "Human Diversity: Implication for Schools"— plus other documents and experiences. One of the documents he refers to is Teaching Reading in Compensatory Classes which he coedited with Priscilla Drum (1979) in which "we tried to bring together the diverse threads from the various surveys of practices in compensatory classes" (p. IV-5). This undoubtedly would have been a helpful document to have on hand. The chapter on "Research on Teaching Reading" seems to be a very comprehensive well-crafted review which does not deal specifically with compensatory education or disadvantaged children. The chapter on "Human Diversity: Implications for Schools" has more direct relevance to compensatory education. Calfee opens that chapter with the statement: "The single most important dimension of psychological, social, and educational diversity among human beings is probably marked by the distribution of wealth, and the power wealth represents." [Calfee believes he would now omit the word "probably."] The chapter deals with diversity in the home and community, in the school, and in students before discussing diversity, decision-making and equity. Calfee raises a number of issues and concerns regarding equal educational opportunity which have important implications for reading.

Beginning with his conception of literacy and the literate person and the place of reading, Calfee arrives at four conclusions which he presents for consideration for alternative strategies to teaching reading.

First, Calfee concludes that "the kid's not the fault." There is a prevailing belief "that the child from a disadvantaged environment is a problem, and one that the school will be hard put to deal with" (pp. IV-42). Noting that some compensatory education programs have had a positive effect on student performance, Calfee questions the "starting assumption....that something special needs to be done, either qualitatively or quantitatively: an earlier start, more time in school, smaller class size, individualized attention, a more structured program, and so on" (p. IV-42). He hypothesizes "that the present methods for promoting literacy are in fact off the mark, that they pose a challenge to the more able students, but are virtually pathological for the child from a lower-class home" (p. IV-43). He believes that "a teacher's expectations (or lack thereof) about a student's potential leads to instructional decisions that can be to the detriment of the student's success" (pp. IV-43). Changing such expectations could lead to changes in instructional decisions. He argues that low-income students have trouble with standardized tests, but that they are not stupid and do know a lot about the world which teachers seem not able to tap and use.

Second, Calfee concludes that "schools cannot afford 'failure'....they can no longer operate as a selectional system certifying the middle-class child and 'dropping out' the lower-class youngster" (p. IV-47). He assumes that the conditions exist which would enable schools to become more effective with all youngsters, especially low-income students.

Third, Calfee concludes that students from disadvantaged homes should not be taught as if they cannot learn. While there are many problems in curriculum and teaching for middle-class children, Calfee finds them few compared to those for the disadvantaged child where the "underlying assumption seems to be that the student has few relevant experiences and cannot think" (p. IV-48). Low-income students encounter programs and practices which differ and are less likely to develop literacy--a stress on decoding and a neglect of comprehension, requests to "sound out words" rather than make informed guesses, rare requests to justify an answer, appropriate feedback that is balanced between support and correction, noncontingent positive feedback, and appropriate pacing. Calfee hypothesizes that if "the curriculum was more straightforward, that the tasks were rendered in more explicit fashion, and that students were provided with adequate instruction in the tasks....the amount of differentiation between children

from lower- and middle-class backgrounds might be relatively small" (p. IV-49).

Finally, Calfee concludes that "changing present organizational patterns may make it easier to succeed" (p. IV-50). He suspects that "tracking, pullout programs, reliance on paraprofessionals to monitor remedial learning" and a variety of other practices serves as barriers rather than facilitators "to improving the curriculum of literacy for youngsters at risk" (p. IV-50). His conclusion is that programs should be funded aimed at improving schools as educational organizations instead of programs targeted to the individual student. What would be involved in "improving schools as educational organizations" other than eliminate or somehow alter pullout programs and grouping at the classroom and within-class levels, is not detailed. Calfee notes that he has yet to see clear instances of positive effects from ability grouping, with the possible exception of gifted students.

Calfee's "conclusions" are intended to serve as implications for compensatory reading instruction. He does not review or comment on the various reading systems, programs, materials, and designs which have emerged since the 1960s aimed at providing developmental and/or remedial instruction for disadvantaged students and one implication from his conclusions is that they are basically irrelevant and of little value in contributing to the development of literacy among these at-risk youngsters.

Adams: Teaching Thinking to Chapter 1 Students

In her concluding section, Adams states that she had two goals in writing the paper: (1) to argue that Chapter 1 students could profit from instruction on thinking and that such instruction would have maximum impact if it were presented as a separate course and (2) to discuss the issues and options which should be considered prior to adapting a course on thinking skills. Considering the proliferation and popularity of programs designed to enhance children's thinking, Adams' approach to reviewing the status of curricula on thinking is useful and helps focus thinking about teaching thinking. Her selection of programs for illustration, analysis and evaluation is helpful. Moreover, Adams clearly has the Chapter 1 population in mind as she reviews research, discussing the implications of the fact that a "large proportion of the Chapter 1 population is comprised of children who, for reasons of ethnicity, or parental education, fall outside the mainstream culture of our society" (p. IV-101). The implications for cultural environments as determiners of the kinds of experi-

ences to which individuals are exposed are discussed in making the case for teaching thinking to Chapter 1 students.

Adam's discussion of the different bases on which thinking curricula have been developed--targeting of "macrological skills" vis-a-vis targeting of "micrological skills"--is helpful in understanding the programs she chooses as illustrations. Common to all programs on teaching thinking is the assumption "that there exists a certain set of skills or processes that are common to thinking in general" (p. IV-87). In fact, three of the curricula discussed--the deBono CoRt Thinking Materials, Lipman's Philosophy for Children, and The Productive Thinking Program of Covington et al.--are the focus of presentations regularly given at conferences and workshops on education of the gifted.

Adams notes that it is difficult to compare the programs on the basis of evaluation data because the data "are often flawed in design and control" (p. IV-90), and, there is a good deal of advocacy rhetoric associated with the literature on thinking. She observes that the good news is that "virtually every reported evaluation includes evidence of some gains and amidst the various evaluation efforts there are also some extremely positive results" (p. IV-90). There is also, she observes, "room for disappointment."

To a greater or lesser extent, the six programs are all beset by three limitations: "transfer or generalization of the processes taught in these courses is limited" (p. IV-91), the programs seem to work best with better students (e.g., gifted) and Chapter 1 students are less likely to be among the better students (p. IV-97), and the programs differ in their useability by teachers, some requiring considerable investments of teacher training time. Adams examines each of these topics--transfer, individual differences, and teacher useability--thoughtfully, if tersely.

With regard to transfer or generalization, Adams asserts that "the purpose of a course on thinking is to enhance students' abilities to face new challenges and to attack novel problems confidently rationally and productively" and, in the case of Chapter 1 students "to create the intellectual leverage to catch up and move on" (p. IV-91).

Her brief discussion of the significance of schemata with respect "to our ability to understand what we hear" has implications not only for curricula on teaching thinking but for curricula more generally. She argues that content-free efforts to teach thinking skills are more likely to succeed than content-oriented approaches since the latter will "be remembered, understood and--importantly--accessible only in relation to that content" (p. IV-92). Intuitive Math and Think

would seem to have resulted in significant gains for Chapter 1 students while Philosophy for Children seems to have produced gains in reading comprehension and/or logical thinking. Adams concludes that in order to maximize transfer, a thinking skills course should "result in a single, well-integrated schema.... centered on the principles and processes the course was intended to develop, and it must be richly and diversely elaborated with concrete or real-world instances of application (p. IV-96).

For Chapter 1 students for whom "their knowledge, skills, and interests tend to be unpredictable both within and across individuals" (p. IV-97), process-oriented approaches to teaching thinking skills seem to be most promising. Whether or not "better students tend to be relatively homogeneous in terms of general knowledge and school skills" (p. IV-97) is arguable but not important in terms of the point being made.

In Conclusion

The five papers provide different kinds of reviews of research in the areas on which they focus, dealing mainly with general research rather than compensatory education research. For the most part, they avoid the controversy concerning the etiology of educational disadvantage. In doing so, the reviewers seem to agree, at least implicitly, with Calfee's conclusions that the problem is not with the disadvantaged child and that improved teaching and raised teacher expectations as well as improvement of schools as educational organizations will raise achievement levels. There are not many discussions of the effects of alternative designs in the sense of the planned variations studies conducted in connection with the Follow Through Program (Emrick, Sorensen, & Stearns, 1973).

Considering the controversy concerning the significance of cultural, language, and linguistic experiences of low-income and racial/ethnic minority children in beginning reading and other instructional areas, the omission of this literature could imply that these reviewers do not think that those differences make a difference with regard to curriculum and instruction of disadvantaged students. There are educators who believe that good reading instruction for middle-class standard English speakers (whatever that may encompass) is good reading instruction for all students regardless of mother tongue or dialect or family culture. There are educators who believe that there is such a thing as "dialect interference" and conflict between communication systems and those who view this notion as irrelevant in designing instruction. The equivocal nature of much of the research on grouping, both between-class and within-class, results in drawing very different conclusions

about the outcomes of such practices, although at the moment, ability grouping is not well regarded by educational reformers despite its widespread practice. The power of teacher attitudes and teacher expectations on student outcomes has long been recognized. How to change those attitudes and expectations has not been well established as yet. The evaluations of compensatory education programs and practices (e.g., Carter, 1984; Walberg, 1984) have not provided clear directions regarding their effectiveness although obviously the problems associated with the poor school performance of disadvantaged populations still exists.

The conception of the nature and etiology of educational disadvantage has, or should have, an impact on curriculum and instructional programs and practices designed to reverse school failure. This is the basis of compensatory education and yet it is often assumed or ignored. Since none of the reviewers have included the possible effects of linguistic, language, cultural, health or other differences in their reviews, one must assume that these differences are considered as having little or no impact. Taking this as an assumption, then the implications for Chapter 1 students which the reviewers present seem appropriate--research suggests that those programs and practices work with other students and should work with Chapter 1 students as well. In his conclusions, Brophy uses the phrase, "Chapter 1 students (or any students for that matter)."

Brophy concludes that the key to maximizing gains of Chapter 1 students is "maximizing the time that they spend being actively instructed by their teachers or supervised as they work on assignments (assuming that both the instruction and the assignments are pitched at an appropriate level of difficulty and otherwise well suited to the students' current needs)" (p. IV-164). Since Brophy does not discuss the literature on curriculum--the what to teach--the "appropriate level of difficulty" and the suitability require further discussion and specification. One of the problems with the time-on-task literature is that students may spend a good deal of time on tasks which are not necessarily appropriate or suitable. Brophy's suggestions regarding small-group instruction and individualized instruction and the possibilities for matching assignments to individual needs must be viewed in the context of Wilkinson's findings regarding within-class grouping since that is the approach which will be normally used to arrange small groups or individualized instruction. Calfee raises some cautions about grouping within class, although he does not specify the alternative directly.

Compensatory education efforts have witnessed a good deal of activity in the development of instructional materials which may be more structured, more culturally relevant, more oriented to independent work, or a variety of other goals. Brophy

suggests that the teacher should carry the content to the student, not rely on the materials to do it. Have publishers who have developed materials which are culturally pluralistic and urban oriented, for example, missed the mark or are different kinds of materials required?

Brophy recommends that teachers should receive "systematic training in classroom organization, lesson presentation, and seatwork management skills involved in effective implementation of the traditional whole-class instruction/recitation/seatwork approach" as a base from which they can then "phase in grouping, differentiated instruction, cooperative learning methods, and other adaptations" (p. IV-165). He cites the Kamehameha Early Education Program (KEEP) as an example of a comprehensive program of "curriculum and instruction that draw[s] eclectically but planfully from the full range of available knowledge in devising effective methods of accomplishing specified goals" (p. IV-166). The KEEP program seems to attend to a variety of elements which Brophy suggests are important, including attention to native Hawaiian cultural traditions which reduce the "degree to which school norms clash with these traditions" (p. IV-167). KEEP is a beginning reading program for low-income children.

Wilkinson expresses many reservations about within-class grouping but does conclude that "grouping students for instruction within Chapter 1 classes may be a useful educational practice to stimulate the learning of low-achieving, disadvantaged students" (p. IV-194). The recommendation is accompanied by some suggestions regarding the formation of such groups, the need for flexibility, the use of a variety of grouping practices, the need to teach students skills required for functioning in groups, and the provision of appropriate quality of instruction. Calfee, however, expresses serious reservations about grouping practices and their outcomes.

The possibility of stigmatizing low-ability low-achieving youngsters by designating them as Chapter 1 students and placing them in groups is a real problem. Staff development and staff planning have to be undertaken to sensitize teachers to the interactive behaviors which will help ameliorate or prevent this problem. Every pullout program--whether it be for the gifted, Chapter 1 students, or any other group--can result in attitudinal problems unless a climate is established in which differentiation is viewed as a natural event.

One aspect of within-class grouping which is seldom discussed is the fact that many schools have large concentrations of low-achieving racial and ethnic minority children. Studies often are concerned with the impact on low-ability youngsters in classes with students who cover the full range of ability and achievement. But many so-called Chapter 1 schools,

while enrolling the whole range of academic ability, have a large majority of their students who are low achievers. In California, for instance, minority enrollment in grades K-12 is expected to exceed 50 percent by 1990. An estimated 23 percent of 5- to 17-year olds in California speak a language other than English at home. Students with limited-English-proficiency already compose almost 12 percent of K-12 enrollment with 41 different languages represented (Policy Analysis for California Education, 1985, p. 1).

Adams' discussion of cultural environments affecting cognitive development is important: "Specifically, cultures differ in the uses they make of thinking and knowledge. This impacts not only on the kinds of thinking and learning a culture fosters, but also on the attitudes it fosters toward thinking and learning" (p. IV-102). Cultural and environmental differences in planning instructional strategies cannot be ignored and yet many curricula assume that such differences are irrelevant. Adams argues that "a good course on thinking skills would be an invaluable boost for [Chapter 1] children... it would give them the critical, analytic, and organizational abilities and attitudes to make the most of the information they do have and will be exposed to" (p. IV-102). She suggests that, of the six programs discussed, Think and Intuitive Math, would seem most promising since they are specifically designed for low-achieving youngsters and their content "has been carefully contrived to connect to and enhance the students' performance in language arts and mathematics" (p. IV-103)--the twin goals of many Chapter 1 programs.

The issue of useability by teacher--the extent to which teachers can be expected to use these programs without extensive and intensive training is raised. The curricula discussed differ widely in this respect and Adams suggests that there are tradeoffs to be considered.

The Odyssey: A Curriculum for Thinking program is discussed in terms of the experience of implementing it in Venezuelas barrio schools. Feuerstein's Instrumental Enrichment programs was also widely tested in Venezuela and it would have been interesting had the experiences and evaluations of the two programs been compared.

The description of Odyssey, the rationale for its design and the population for which it is intended, would suggest that it is a thinking program which may have promise for Chapter 1 students.

Adams concludes: "For Chapter 1 students especially, the direct teaching of thinking promises to be the best institutionalizable means of developing the competencies and attitudes they need to make the most of their schooling and their lives"

(p. IV-115). Adams' paper makes a strong case for testing this statement as a hypothesis. The data do not yet warrant direct teaching of thinking without considering the issues Adam raises in selecting from and implementing a curricula for teaching thinking.

Early on, a concern was expressed regarding the absence of consideration of the linguistic, affective, social, developmental, cultural, learning styles, and other characteristics of low-SES, racial and minority children and youth. It was asserted that such children are like all other children in many ways but that they do have unique and different needs as well which require programs and services which we call compensatory education. If the research reported reflects the position that human diversity exists among all children and that curriculum and instruction must deal with that diversity, then the suggestion that the recommendations are appropriate for Chapter 1 students or any students for that matter, is valid. However, teachers and planners must understand which human differences make a difference and attend to them in their planning.

As Carter (1984) observed:

> There is a complex interaction between the curriculum, the characteristics of teachers and administrators, the social and economic characteristics of the school, and the background of students. This leads to the unfortunate situation that in attempting to improve performance of disadvantaged students, one must improve a large number of educationally relevant factors, and there is no simple solution to the problems of improving the education of disadvantaged children. (p. 12)

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